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South Onondaga Fire Department
South Onondaga, New York

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
May 4, 2025
Summary Report

The Purpose

- The purpose of the seminar and drill was to review the basics of rural water supply operations and to practice water supply operations in a non-hydranted setting.
- The drill also allowed mutual aid companies to work together in a real-life training situation.



The Seminar



- The 2-day seminar started with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the South Onondaga fire station.
- Once the classroom part was over, the seminar continued with 8 hours of practical work on fill-site and dump site operations.
- The program concluded with the 2-hr ISO tanker shuttle exercise and program review.
- Seminar participants were from Onondaga County and the surrounding area.

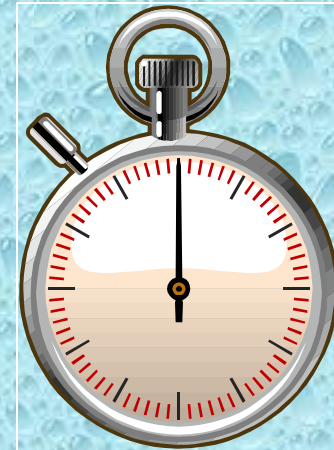
The 2-hour Water Supply Drill

- The tanker shuttle drill was held on May 4th at the South Onondaga Fire Station.
- The drill attempted to replicate the 2-hour Water Supply Delivery Test used by ISO in their evaluation of fire department water supply capabilities.
- While ISO no longer uses the physical demonstration of water supply delivery, the 2-hour test is still a reasonable standard by which fire departments can compare their water supply operations.
- *ISO now uses computer modeling to predict tanker shuttle flow capabilities.*



The ISO Test

- The ISO 2-hour Water Supply Delivery Test has three critical time segments:
 - 0:00 to 5:00 minutes
 - 5:01 to 15:00 minutes
 - 15:01 to 120:00 minutes



ISO Test *0:00 to 5:00 Minutes*

- A drill location is selected and the units due to respond on the first-alarm assignment are dispatched.
- Time starts when the first engine arrives on the scene and comes to a complete stop.
- There is no requirement to flow water during the first 5 minutes, but the crew must be prepared to flow water once the 5-minute mark is reached.



ISO Test *5:01 to 15:00 minutes*



- At the 5-minute mark, a flow of at least 250 gpm must be started - and it must be sustained.
- During the next 10-minutes, crews can work to further develop their water supply and increase their flow, however...
- At the 15-minute mark (5+10), whatever amount of water is flowing at that time must be maintained for the remainder of the 2-hour test.

ISO Test *15:01 to 120:00 minutes*

- Once the 15-minute mark has been reached, the remainder of the 2-hour test is really just about **sustaining** the flow.
- The ISO test includes the simulation of automatic mutual aid response and allows additional water supply units to arrive and assist in the delivery process as would happen on a real incident.
- The real advantage of the ISO test is that it gives a fire department the chance to see where improvements can be made in their water supply delivery process.



It is one thing to say that your fire department can deliver 500 gpm for two hours – it is another thing to prove it in a real-life drill scenario!

Water Supply Drill Participants

Participants				
Department	Unit	Pump Size	Tank Size	Dump Tank
Otisco	Tanker 1	1000	2500	3000
Warners Memphis	Tanker 1	360	1800	2000
South Onondaga	Tanker 5	1250	2500	2000
South Onondaga	Engine 6	1500	1000	n/a
South Onondaga	Engine 2	1250	1000	1800
Navarino	Tanker 1	1250	1800	2000
Otisco	Tanker/Pumper 1	1500	1800	2100
Plainville	Engine 3	1750	1500	2500
Plainville	Tanker 1	350	2400	2500
Borodino	Tanker 1	1500	2500	2100
Nedrow	Tanker 2	500	1500	2000
Amber	Tanker 3	1000	2500	2500

- The participants for the drill were from several different fire departments in the Onondaga County region and the water hauling apparatus was representative of the type of water supply support that would respond to a structure fire in Onondaga County.*

The Drill Begins



The drill started with crews electing to pump off water from the first arriving tanker to the dump site engine. South Onondaga E-6 arrived on the scene and laid out 200-feet of 5-inch supply hose to a hose monster and went to work as the dump site pumper. A few minutes later Navarino TA-1 (1800 gal) arrived and began supplying E-6 through the auxiliary intake. E-6 did not have an intake control valve on the steamer connection so crews had to work fast once tanks were on the ground and the decision was made to switch to drafting from the dump tank. This could have been avoided by using the clappered Siamese that was part of the hose lay to the hose monster.

Dump Site Operations



Two dump tanks were quickly on the ground and Plainville Tanker 1 dumped into the primary tank. E-6 quickly set up to draft from both the front intake and driver's side intake.

Dump Site Operations



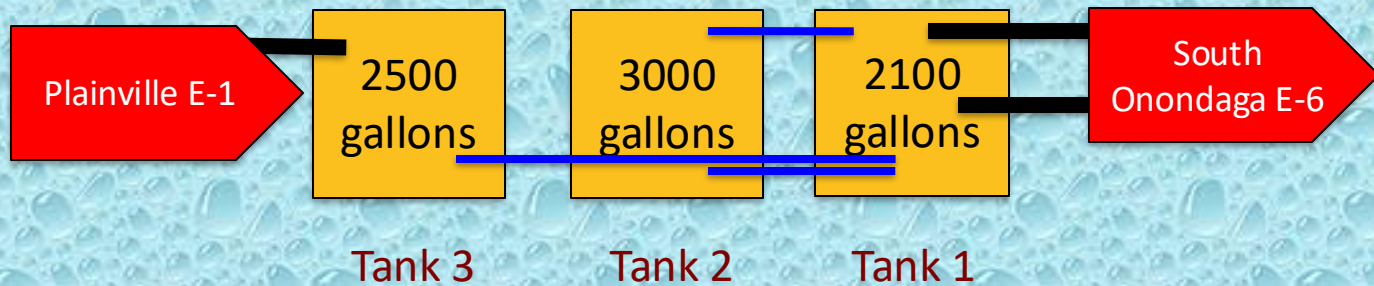
The third tanker got too close to the tank and when leaving knocked the folding tank drain sleeve out of its' bar clamp. With this style of drain sleeve clamp it is probably better to put the drain sleeve inside the tank and fold it over the top rail and into the bar clamp. That way it is out of the way of tankers driving by. The weight of the water also helps keep the sleeve closed.

Dump Site Operations



Plainville E1 took suction out of the third tank and ran jet siphons for the rest of the operation.

Dump Site Layout



— Suction Hose
— Jet Siphon

The Fill Sites

- For this drill – basically one fill site was used – located on a nearby creek.
- The fill site provided about a 2.0-mile round trip for the units hauling water.
- The site had ample water volume to support the drill, and access was not a problem.
- A 1250 gpm pumper was used to load tankers.
- Having LDH, manifolds, and in-line drains greatly helped speed up the operation.

Creek Fill Site



South Onondaga E2 (1250 GPM) drafted directly from the creek with 6" hard sleeve. The unit had no LDH discharges it so utilized (2) 50' 2.5" sections of hose wye'd via a manifold to a short section of 4". This ran to another manifold that split the flow into (2) 4" lines. One of these was short and the other longer (150') so that they could have 2 tankers connected at once (fill one at a time but reduce time spent between filling due to coupling, uncoupling, moving out of the way etc.). Eventually they acquired another manifold and an inline drain (pic above) which allowed them to drain the 4" fill lines quickly and unhook from the tankers. Several tankers did not have drains on their direct tank fills so the added drain helped a lot with uncoupling.

Creek Fill Site



The short loop (2 miles) and the number of tankers in the shuttle overwhelmed the Creek fill site (L pic) so very late into the drill a 2nd site (5-mile round trip) was opened. The Amber tanker (R pic) obtained a draft (pretty high lift-12-15 feet) and filled 2 tankers utilizing a short piece of 5" hose, however, only 2 tankers were filled at this site prior to the drill coming to an end.

The Results

- The drill was stopped at the 2-hour mark.
- Water flow was never interrupted!
- An estimated 70,000 gallons of water were flowed through the attack pumper during the drill producing an average flow rate of 608 gpm.
- For the last 90-minutes of the drill a flow of 750 gpm or greater was supplied.

The Lessons Learned

- At this drill, crews chose to pump off water to the dump site engine to get things started.
- This option gave the crews time to get a dump tank set-up without the added pressure of having to draft and flow water right away.
- An intake control valve on the pumper would have helped make this smoother but the crews worked through the complexity of having water flow out of the hard sleeve once it was hooked up.
- Once the first dump tank was up and running the operation ran fairly well, other than the drain sleeve on the primary tank getting knocked loose early in the game.

The Lessons Learned

- As the flow increased, additional suction lines were added as were additional dump tanks.
- Using a second pumper to pump the jet siphons was ok; this pumper might have been better utilized to set up a secondary fill site earlier in the drill.
- If a second pumper is used to flow jet siphons, consideration should be given to having it draft out of the primary tank so that the dump site crew can prioritize keeping that tank full instead of worrying about two tanks.

The Lessons Learned

- A tanker fill-site needs to run like a NASCAR pit stop. Anything that slows down the loading of tankers is going to reduce the efficiency of the tanker shuttle.
- At this drill, some tankers had large clapper style fill valves but without drains. This made it difficult to uncouple LDH until an in-line drain was introduced. Tankers with this condition should consider making up their own short fill line with an in-line drain.

The Lessons Learned

- The use of manifolds at the fill site greatly aided in the ability to use LDH and to have the ability to maneuver in and hook up a second tanker while filling the first...thus enabling the fill site to almost continuously fill instead of losing time watching tankers move in, couple, uncouple, and move out.
- Jet siphons, suction hose, and dump tanks are needed at most every dump tank operation – therefore, it is wise to carry those items on every tanker – as well as adaptors.
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Drill Videos

**Be sure to watch videos from
the drill on the
GotBigWater
YouTube Channel.**

Summary

- The drill was a success. For the new folks, they got to see how dump tank operations work.
- For the older, experienced folks, it was a chance to practice their “craft.”
- The success of the drill showed the importance of mutual aid response practices and procedures – and the importance of mutual aid interoperability.
- Many thanks to the South Onondaga FD for sponsoring and hosting the seminar.



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